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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WILSON, MICHAEL C	
ART UNIT	PAPER NUMBER
1632	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	08/889,355	ENGLER ET AL.	
	Examiner	Art Unit	
	Michael C. Wilson	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *41 and 54-56* is/are pending in the application.

4a) Of the above claim(s) *54 and 56* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *41 and 55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7-13-04 has been entered.

The amendment filed 7-13-04 was not entered because applicants did not use the proper format; claims 1-40 should have been labeled "cancelled."

The amendment filed 9-2-04 is correct and has been entered.

Applicant's arguments filed 7-13-04 have been fully considered but they are not persuasive.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-40 and 42-53 have been canceled. Claims 55 and 56 have been added. Claims 41, 54, 55 and 56 remain pending in the instant application.

The effective filing date of the claimed invention remains July 8, 1997.

Election/Restrictions

Claim 54 remains withdrawn because it is directed to an invention that is independent or distinct from the invention originally claimed. The compound of Claim 54 would require a different search not previously required.

Applicants argue claim 54 names a compound that falls within the scope of the elected inventive group. Applicants' argument is not persuasive. It is not readily apparent that the structure of 3'-N-gluconamidopropyl-3"-N-cholamidopropyl-N-cholamide as newly claimed is related to the compound originally claimed. It is not readily apparent that the structure of "3'-N-gluconamidopropyl-3"-N-cholamidopropyl-N-cholamide" referred to on pg 31, line 2 (Example 12) is related to the compound originally claimed.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 54 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Newly submitted claim 56 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: a compound where X3 is the structure shown does not have support on pg 31, line 4, which refers to glucono-δ-lactone used to make 3'-N-gluconamidopropyl-3"-N-cholamidopropyl-N-cholamide. It is not readily apparent that glucono-δ-lactone is the structure in claim 56.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 56 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claims 41 and 55 are under consideration in the instant office action.

Claim Rejections - 35 USC § 112

1. Claims 41 and 55 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for reasons of record.

Claims 41 and 55 do not have support in the specification as originally filed. In particular, the structure of the cholic acid group as currently amended in claim 41 and new claim 55 has no support in the specification as originally filed, specifically in Example 12.

2. Claim 41 remains rejected and claim 55 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for reasons of record.

Claim 41 is drawn to a compound wherein X1 and X2 are both cholic acid groups and X3 is a pentose monosaccharide group. Claim 55 is drawn to a compound wherein X1 and X2 are both cholic acid groups and X3 is a hexose monosaccharide group. The specification teaches isolating Impurities I, II and III from BigCHAP; however, the specification does not describe their structure. Since the time of filing, the structure of

Impurities I, II and III have been determined (see Fig. 22, 23 and 24 in US Application 09/112,074, now US Patent 6,392,069).

Impurity I does not correlate to the compound of claim 41 because Impurity I does not have the same tertiary nitrogen as the compound in claim 41.

Impurity III does not correlate to the compound of claim 41 because X1 is a saccharide group in Impurity III while X1 is a cholic acid group in the compound claimed.

Since the time of filing Impurity II has been described as a compound having both X1 and X2 as cholic acid groups and X3 as a pentose monosaccharide, which correlates to the structure of claim 41 and not claim 55. The specification as originally filed did not adequately describe Impurity II as a compound having both X1 and X2 as cholic acid groups and X3 as a pentose monosaccharide. Example 12 (pg 31, lines 15-19) illustrates the procedure for making a compound but does not describe the structure of the compound; nor is it readily apparent that Example 12 is synthesizing Impurity II. Page 5, lines 2-10, does not teach both X1 and X2 were cholic acid and X3 was a pentose monosaccharide. Page 6, lines 31-32, merely states that a saccharide group found in a compound of Formula I (as originally filed wherein X1 and X2 had broader scopes) may be a pentose monosaccharide and does not teach or suggest that X1 and X2 are both cholic acid while X3 is a pentose monosaccharide. The structure of Impurity II is not readily apparent from the specification as originally filed because the specific combination of elements in X1, X2 or X3 could not have been guessed based on the broad original description of Formula I and the broad scope of possibilities for X1, X2 and X3. Without such guidance, the specification as originally filed did not

adequately describe the structure of the compound of claim 41, specifically that the compound had the properties of Impurity II.

While Impurity II is a species within the genus of compounds contemplated as "Formula I" in the specification as originally (see original claim 1), the specific structure of Impurity II and now claimed was not disclosed or readily apparent from the specification. Nor did the specification as originally filed link the ability to increase transfection of nucleic acids into cells found in Impurity II with a compound having a structure as now claimed. An adequate written description of Impurity II requires more than a mere description of the genus of the compound and a statement that Impurity II was isolated and part of the invention. What is required is a description of the structure of Impurity II itself. It is not sufficient to state Impurity II is one of a host of possible combinations of elements because disclosure of no more than that, as in the instant case, is simply a wish to know the identity of the specific structure of Impurity II. Thus, claiming a compound without describing the specific structure of the compound is not in compliance with the description requirement. Rather, it is an attempt to preempt the future before it has arrived. (See *Fiers v. Revel*, 25 USPQ2d 1601 (CA FC 1993) and *Regents of the Univ. Calif. v. Eli Lilly & Co.*, 43 USPQ2d 1398 (CA FC, 1997)).

Applicants argue that one of skill would have readily recognized that the compound in Example 12 had the structure shown on pg 6 of the arguments filed 7-13-04. Applicants state the "identity of the compound from Example 12, as depicted below in Figure 1, is unambiguously supported by the mass spectral data presented on pg 31, lines 25-27 showing a mass to charge ratio peak (m/z) of 1090.6 which corresponds to product molecular weight of MW=1089.7 g/mol." Applicants' arguments are not persuasive. While the formula for Impurity II, set forth in Figure 1 of the arguments and

now claimed, is a species within the genus of compounds contemplated as "Formula I" in the specification as originally (see original claim 1), the specific structure of Impurity II and now claimed was not disclosed or readily apparent from Example 12. The mass spectral data on pg 31, lines 25-27, is generic to the broad genus of claim 1 as originally filed and not to the specific structure of Impurity II.

Impurity II has a cholic acid group attached at X1 and X2 such that the terminal CO_2H of cholic acid is removed; however, the manner in which cholic acid is attached at X1 and X2 was not disclosed in the specification as originally filed. It is not readily apparent from the description of Impurity II that X1 and X2 were cholic acid with a deletion of the terminal CO_2H. Applicants state a person of skill in the art would have understood Example 12 described a cholic acid group as being a cholic acid without a terminal CO2H. Applicants' argument is not persuasive. It would not have been readily apparent to one of skill in the art what structure would result from the method in Example 12, specifically how cholic acid would attach at X1 and X2 or the structure of cholic acid once it reacts with isobutylchloroformate in the presence of triethylamine. Nor does Example 12 teach Impurity II is the product being synthesized. It would not have been readily apparent to one of skill at the time of filing that the process described in Example 12 results in Impurity II. Example 12 does not describe 3-aminopropyl-3'-N-gluconamidopropyl-amine (the product being synthesized) as Impurity II. The specification does not describe Impurity II (isolated in Example 11, pg 28), as 3-aminopropyl-3'-N-gluconamidopropyl-amine. It would not have been readily apparent to one of skill in the art that the method in Example 12 made Impurity II or was specific to making only Impurity II. It would not have been readily apparent to one of skill that reacting cholic acid with isobutylchloroformate in the presence of triethylamine described in Example 12 would result in cholic acid without the terminal CO2H. The art

at the time of filing did not define a "cholic acid group" as being cholic acid without the terminal CO2H. Therefore, the structure of Impurity II being that of claim 41 was not readily apparent to one of skill in the art at the time of filing based on the teachings in the specification as originally filed.

Applicants argue that one of skill in the art would have recognized that the cholic acids were attached to the core of Formula I as claimed. Applicants show evidence that the chemical reaction required to attach the cholic acid group was a common synthetic transformation known to those of skill in the art. Applicants' arguments are not persuasive because they are based on the presumption that one of skill would have recognized that Example 12 described how to make Impurity II. In no way does Example 12 imply that 3'-N-gluconamidopropyl-3"-N-cholamidopropyl-N-cholamide is Impurity II as claimed. Nor would one of skill have known that Impurity II as it occurs in nature had the same cholic acid group attachment as 3'-N-gluconamidopropyl-3"-N-cholamidopropyl-N-cholamide synthesized in a lab. As such, Example 12 does not teach one of skill how the cholic acid group of Impurity II was attached to the core as it occurred in nature.

3. Claim 41 remains rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention for reasons of record.

The claim is drawn to a compound having a particular structure wherein X1 and X2 are both cholic acid groups and X3 is a pentose monosaccharide group. The specification teaches isolating Impurities I, II and III from BigCHAP; however, the specification does not describe their structure. Since the time of filing, the structure of

Impurities I, II and III have been determined (see Fig. 22, 23 and 24 in US Application 09/112,074, now US Patent 6,392,069). BigCHAP and Impurity I do not correlate to the compound of claim 41 because BigCHAP and Impurity I do not have the same tertiary nitrogen as the compound in claim 41. Impurity III does not correlate to the compound of claim 41 because X1 is a saccharide group in Impurity III while X1 is a cholic acid group in the compound claimed.

Since the time of filing Impurity II was described as a compound having both X1 and X2 as cholic acid groups and X3 as a pentose monosaccharide. The specification as originally filed did not distinguish the structure of Impurities I, II and III, so that one of skill would have known Impurity II had X1 and X2 as cholic acid groups (and not deoxycholic acid group). Nor did the specification teach X3 in Impurity II was a pentose monosaccharide group. Therefore, the structure of Impurity II is not readily apparent from the specification as originally filed because the specific combination of elements in X1, X2 or X3 could not have been guessed. Thus, it would have required one of skill undue experimentation to determine how to make or use the compound claimed as Impurity II. Furthermore, Impurity II has a cholic acid group attached at X1 and X2 such that the terminal CO_2H of cholic acid is removed; however, the manner in which cholic acid is attached at X1 and X2 is not disclosed in the specification. It is not readily apparent from the description of Impurity II that X1 and X2 were cholic acid with a deletion of the terminal CO_2H. Therefore, the structure of Impurity II is not readily apparent from the specification as originally filed because it could not have been guessed that the cholic acid group was attached such that the terminal CO_2H was deleted.

Applicants' arguments for enablement are the same as those for written description, which are addressed above in the written description rejection.

4. Claim 41 remains rejected and claim 55 is rejected as being indefinite because the structures encompassed by the claims are unclear for reasons of record.

The claims require a compound having Formula I, wherein X1 and X2 are both cholic acid groups. The specification (Ex. 11) states three impurities (I, II and III) were isolated from BC BigCHAP, but does not teach the structure of the impurities or how cholic acid is attached to Formula I. The structure of Impurity II has three carbons between the carboxyl group and the pentose ring instead of four in the cholic acid (i.e. Impurity II require X1 and X2 are both a cholic acid group wherein the cholic acid group is cholic acid with a deletion of the terminal CO_2H). Addition of cholic acid to Formula I may result in i) four carbons between the carboxyl group and the pentose ring of the cholic, ii) removal of the carboxyl group, iii) or attachment at one of the hydroxyl groups. Therefore, it is unclear whether applicants intend the claim to encompass any means of attaching cholic acid to Formula I at X1 and X2 or if the claim is limited to removal of the carboxyl group of cholic acid.

Applicants' arguments for 112/2nd are the same as those for written description and enablement, which are addressed above in the written description rejection.

Conclusion

No claim is allowed.

Inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wilson who can normally be reached at the office on Monday, Tuesday, Thursday and Friday from 9:30 am to 6:00 pm at 571-272-0738.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached on 571-272-0804.

The official fax number for this Group is (703) 872-9306.

Michael C. Wilson

MICHAEL WILSON
PRIMARY EXAMINER